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Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 4 bedroom single family residence on Lot #3 KERRI Subdivision, Iredell County, North Carolina.

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February 21, 2007
Project #: 01-1220
Design By: Rollans Soil and Environmental Services

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner: T & E DEVELOPERS

Address: 112 VISTA BLUFF LN.
MOORESVILLE, NC 28117
Phone: 704-202-9595
County: Iredell
Location: KERRI SUBDIVISION Lot #3

Source of Wastewater Flow: 4 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 480 gpd
System Flow: 35.55

Design Specifications

Drainfield Size: 400
Loading Rate: 0.3
Depth of Gravel in Trench: NA (25% reduction)
Gravel Size: NA (25% reduction)
Trench Depth: 36 in.
Trench Width: 36 in.
Septic Tank Size: 1000
Pump Tank Size: 1000

Estimated Supply Line Length: 137
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 23.84
Dosing Volume: 182.84
Supply Manifold: 4 in. SCH 80 PVC
Supply Manifold Length: 4 ft. (minimum)
Supply Manifold Volume: N/A

Recommended Float Controls: SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel: SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.

Pressure Head: 2 ft.
Friction Head: 1.74
Elevation Head: 11.60
Total Dynamic Head: 17.64

Threaded Union: In Tank
Gate Valves: 1 in Tank
1 at Pressure Manifold
Check Valves: In Tank
Anti-Siphon Hole: NA
Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services.

KERRI SUBDIVISION Lot #3
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	480
SOIL APPLICATION RATE:	0.3
TOTAL AREA TRENCH BOTTOM:	1200
TOTAL LATERAL LENGTH:	400
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	400
SUPPLY LINE LENGTH:	137
TOTAL DYNAMIC HEAD:	17.64
MANIFOLD SIZE:	4 in.SCH 80 PVC
DOSING VOLUME:	182.84
PUMP TANK DRAW DOWN*:	8.7
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

CALCULATIONS

Location KERRI SUBDIVISION

Project Number 01-1220

Lot No: Lot 3

No. of Bedrooms	4
Design Flow	480 $^{gal}/_{day}$
LTAR	0.3 ^{gal}/ft2
25% RED.? (YES OR NO)	YES
Supply Line Length	137 ft.
Supply Line Volume	23.838 gal.
Required Feet of Line	400 ft.
Amount of Line from Layout	400 ft.
Gallons per Minute	35.55 $^{gal}/_{min}$
Required Septic Tank Capacity	1000 gal.
Minimum Standard Tank Size	1000
Lateral Line Volume	261.2 gal.
Dosing Volume	182.84 gal.

Note: Dosing Volume based on 65% of lateral line volume

Tank Draw Down	8.7 *Generic Draw Down of 21 gal.per in.*
Pump Run Time	5.14 minutes
Elevation Head	11.6 ft.
Pressure Head	2 ft.
Friction Factor	1.27 ft./100 ft. *(From the interpolater.)*
Friction Head	1.74 ft.
Total Dynamic Head (+15%)	17.64 ft.

FRICTION FACTOR INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42

KERRI SUBDIVISION LOT 3

Project #: 01-1220

LAYOUT FOR 4 BEDROOM HOME

February 21, 2007

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		1.4			100.00		
TANK		11.00	90.40				
HOUSE		7.64	93.76				
INSTR. 1			101.40				
1	ORANGE			2.80	98.60	30	30
2	PINK			3.20	98.20	55	55
3	ORANGE			3.40	98.00	77	77
4	BLUE			3.80	97.60	111	111
5	DARK PINK			4.40	97.00	80	60
6	***DARK PINK***			***4.40***	***97.00***	***80***	***80***
7	***PINK***			***5.20***	***96.20***	***80***	***80***
8	***PINK***			***5.20***	***96.20***	***80***	***80***
9	***ORANGE***			***6.00***	***95.40***	***80***	***80***
10	***BLUE***			***7.80***	***93.60***	***80***	***80***
					Total	**753**	**733**

	LINE LENGTH	LTAR GPD/FT^2	SYSTEM TYPE	SOIL LTAR GPD/FT^2	TRENCH SYSTEM	DISTRIBUTION
** System*	*400*	*0.30*	*ACCEPT.*	*0.30*	*25% RED.*	**PRESSURE**
Repair	333	*0.25*	*MOD.*	*0.25*	PPBPS	**MANIFOLD** LOW PRESSURE

Notes:

** TBM located on corner of lot (see site plan)
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

PRESSURE MANIFOLD TAPSHEET - KERRI LOT 3

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area
6	***DARK PINK***	97	**80**	SCH 40 1/2	**7.11**	240
7	***PINK***	96.2	**80**	SCH 40 1/2	**7.11**	240
8	***PINK***	96.2	**80**	SCH 40 1/2	**7.11**	240
9	***ORANGE***	95.4	**80**	SCH 40 1/2	**7.11**	240
10	***BLUE***	93.6	**80**	SCH 40 1/2	**7.11**	240
	total	**feet =**	**400**	**gal/min =**	**35.55**	
			Des. Flow	**480**		
			Pump Run=	**5.14**		
			soil LTAR	**0.3**		
			LTAR +5%	**0.315**		
			LTAR with ACCEPTED	**0.33075**		
			LTAR with ACCEPTED + 5%	**0.3472875**		